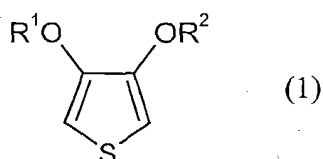


**Patent claims**

1. A method for producing an aqueous dispersion containing a complex of poly(3,4-ethylenedioxythiophene) and a polyanion comprising:

5

polymerizing 3,4-dialkoxythiophene represented by formula (1):



10

wherein  $R^1$  and  $R^2$  are independently hydrogen or a  $C_{1-4}$ -alkyl group, or together form a  $C_{1-4}$ -alkylene group which may optionally be substituted,

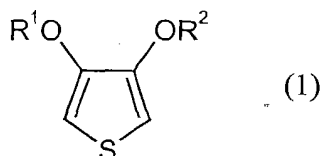
wherein the polymerization is performed in the presence of the polyanion by using peroxodisulfuric acid as an oxidizing agent in an aqueous solvent.

15

2. A method for producing an aqueous dispersion containing a complex of poly(3,4-dialkoxythiophene) and a polyanion comprising:

chemically oxidatively polymerizing 3,4-dialkoxythiophene represented by formula (1):

20



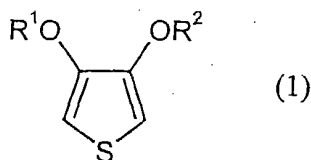
wherein  $R^1$  and  $R^2$  are independently hydrogen or a  $C_{1-4}$ -alkyl group, or together form a  $C_{1-4}$ -alkylene group which may optionally be substituted,

25

wherein the polymerization is performed in the presence of the polyanion by using an oxidizing agent in an aqueous solvent, in which an acid selected from the group of water-soluble inorganic acids and water-soluble organic acids is added so as to lower pH of the resultant reaction mixture.

3. A method for producing an aqueous dispersion containing a complex of poly(3,4-dialkoxythiophene) and a polyanion comprising:

polymerizing 3,4-dialkoxythiophene represented by formula (1):



wherein R<sup>1</sup> and R<sup>2</sup> are independently hydrogen or a C<sub>1-4</sub>-alkyl group, or together form a C<sub>1-4</sub>-alkylene group which may optionally be substituted,

wherein the polymerization is performed in the presence of the polyanion by using peroxodisulfuric acid as an oxidizing agent in an aqueous solvent, in which an acid selected from the group of water-soluble inorganic acids and water-soluble organic acids is added so as to lower pH of the resultant reaction mixture.

4. An aqueous dispersion containing a complex of poly(3,4-dialkoxythiophene) and a polyanion obtained by the method according to any of claims 1 to 3.

5. A coating composition comprising,

an aqueous dispersion containing a complex of poly(3,4-dialkoxythiophene) and a polyanion according to claim 4, and

a compound selected from the group consisting of water-soluble compounds having an amide group, water-soluble compounds having a hydroxyl group, water-soluble sulfoxides, and water-soluble sulfones.

- 5      6. A substrate having a conductive transparent film produced by applying a coating composition according to claim 5 on a surface of a substrate and drying the resultant substrate.